

Weitzler, Ellen

From: Weitzler, Ellen
Sent: Tuesday, July 23, 2013 11:51 AM
To: 'Kavanah, Brian W'; Margerum, Mark T
Subject: RE: adopted revision of phenol for consumption of water + organism

Hi Brian,

Yes, it does. I can see that the correct methodology was used, but there's a math error in the calculation.

Thanks

Ellen

Ellen Weitzler, P.E.
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From: Kavanah, Brian W [<mailto:Brian.W.Kavanah@maine.gov>]
Sent: Monday, July 22, 2013 5:12 PM
To: Weitzler, Ellen; Margerum, Mark T
Subject: RE: adopted revision of phenol for consumption of water + organism

Hi Ellen,

I looked through Bob's rulemaking files and found this. Page 2 has his calculations. Please let me know if this clarifies the issue for you.

Thanks.

From: Weitzler, Ellen [<mailto:Weitzler.Ellen@epa.gov>]
Sent: Monday, July 22, 2013 9:52 AM
To: Margerum, Mark T
Cc: Kavanah, Brian W
Subject: adopted revision of phenol for consumption of water + organism

Hi Mark,

I'm working on the approval letter for acrolein and phenol in state waters.

Using the EPA methodologies and Maine's fish consumption rate of 32.4 gm/day, I was able to calculate human health criteria for acrolein that agreed with Maine's adopted revisions to 3.9 ug/L (for consumption of water + organisms) and 5.0 (for consumption of organisms only). I was also able to calculate the human health criteria for phenol for consumption of organisms only that agreed with Maine's adopted revision to 462,963 ug/L.

However, I was not able to derive Maine's adopted revision of the phenol criteria for consumption of water + organisms to 10,514 ug/L.

Using the following criteria derivation equation for Ambient Water Quality Criteria (AWQC)

$$AWQC = RfD \times RSC \times [BW / (DI + (FI \times BAF))] \text{ (see parameter definitions and values below)}$$

leads to a criteria of 10,267 ug/L.

Please let me know if you have made any other assumptions regarding the parameters below or any other revision to the methodology to account for the difference.

Thanks

Ellen

Human Health Criteria for Phenol for consumption of Water and Organisms	
RfD (Reference Dose) in mg/kg-day	0.3
RSC (Relative Source Contribution to account for other sources of exposure) as a % of total exposure	1
BW (Human Body Weight for average adult) in kg	70
DI (Drinking Water Intake for average adult) in L/day	2
FI (fish Intake) in kg/day	0.0324
BAF (bioaccumulation Factor) in L/kg (or BCF if no BAF)	1.4
AWQC in mg/L	10,267

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